



**ENVIRONMENTAL ENGINEERING, INC**

6620 Owens Drive, Suite A • Pleasanton, CA 94588-3334  
TEL (925) 734-6400 • FAX (925) 734-6401

June 19, 2006

Ms. Darcy Bering  
Sonoma County Department of Env. Health  
475 Aviation Blvd., Suite 220  
Santa Rosa, California 95403

Subject: SCDHS-EHD Site #00002640  
3705 Gravenstein Highway South, Sebastopol, California

Dear Ms. Bering:

Enclosed for your review is a copy of SOMA's "Second Quarter 2006 Groundwater Monitoring Report" for the subject property. This report has been uploaded to the State's GeoTracker database.

Thank you for your time in reviewing our report. Please do not hesitate to call me at (925) 734-6400, if you have any questions or comments.

Sincerely,

Mansour Sepehr, Ph.D., PE  
Principal Hydrogeologist

Enclosure

cc: Mr. Chris Ghanayem w/enclosure





ENVIRONMENTAL ENGINEERING, INC  
6620 Owens Drive, Suite A • Pleasanton, CA 94588-3334  
TEL (925)734-6400 • FAX(925)734-6401

## **Second Quarter 2006 Groundwater Monitoring Report**

### **Bill's Deli and Market**

**3705 Gravenstein Highway, South  
Sebastopol, California 95472**

June 19, 2006

Project 2871

Prepared for

**Mr. Chris Ghanayem**

**3705 Gravenstein Highway, South  
Sebastopol, California 95472**

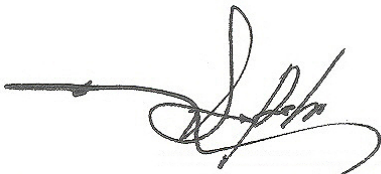
Prepared by

**SOMA Environmental Engineering, Inc.**

**6620 Owens Drive, Suite A  
Pleasanton, California 94588**

## Certification

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Chris Ghanayem, the property owner of Bill's Deli and Market, which is located at 3705 Gravenstein Highway South, Sebastopol, California, to comply with the Sonoma County Department of Environmental Health's and California Regional Water Quality Control Board's requirements for the Second Quarter 2006 groundwater monitoring event.



Mansour Sepehr, Ph.D., P.E.  
Principal Hydrogeologist



## TABLE OF CONTENTS

Certification.....	i
TABLE OF CONTENTS .....	ii
List of Tables.....	iii
List of Figures .....	iii
List of Appendices.....	iii
1.0 INTRODUCTION .....	1
1.1 Previous Activities.....	1
2.0 RESULTS .....	2
2.1 Field Measurements .....	2
2.2 Laboratory Analyses.....	2
3.0 CONCLUSIONS & RECOMMENDATIONS.....	3
4.0 REPORT LIMITATIONS .....	3

## **List of Tables**

- Table 1: Historical Groundwater Elevation Data & Analytical Results: TPH-g, BTEX, & MtBE
- Table 2: Historical Groundwater Analytical Results: Gasoline Oxygenates, Ethanol, Lead Scavengers

## **List of Figures**

- Figure 1: Site vicinity map.
- Figure 2: Site map showing location of groundwater monitoring wells
- Figure 3: Groundwater elevation contour map in feet. May 17, 2006.
- Figure 4: Contour map of MtBE concentrations in the groundwater (EPA Method 8260B). May 17 and 18, 2006.

## **List of Appendices**

- Appendix A: SOMA's Groundwater Monitoring Procedures
- Appendix B: Table of Elevations & Coordinates on Monitoring Wells Measured by Harrington Surveys, Inc., and Field Measurements of Physical and Chemical Parameters of Groundwater Samples
- Appendix C: Chain of Custody Form and Laboratory Report for the Second Quarter 2006

## **1.0 INTRODUCTION**

This report has been prepared by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Chris Ghanayem, the property owner of Bill's Deli and Market, which is located at 3705 Gravenstein Highway South, Sebastopol, California ("the Site"), as shown in Figure 1. The Site is currently an active gasoline station and convenience market. The Site is located in an area consisting primarily of small commercial and rural residential properties.

This report summarizes the results of the Second Quarter 2006 groundwater monitoring event conducted at the Site on May 17 and 18, 2006. Included in this report are the physical and chemical properties measured in the field for each groundwater sample. The physical and chemical properties consisted of measurements of pH, temperature, and electrical conductivity (EC). This report also includes the laboratory analytical results on the groundwater samples.

These activities were performed in accordance with the general guidelines of the Sonoma County Department of Environmental Health and the California Regional Water Quality Control Board (CRWQCB). Appendix A details the groundwater monitoring procedures used during this monitoring event.

### **1.1 Previous Activities**

In March 1997, DHS Contractors and Touchstone Development removed three 10,000-gallon gasoline single-walled steel underground storage tanks (USTs) from the Site. Product lines and the pump island were also removed during the tank removal activities. Soil samples were collected from the excavation pits. Sonoma County Public Health Department official John Anderson was present during these removal and sampling events. The fuel USTs showed no visible holes or damage. Figure 2 shows the locations of the USTs.

The soil and groundwater samples collected from the bottom of the excavated UST cavity, pump island, and product lines were analyzed for total petroleum hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, total xylenes (BTEX), Methyl tertiary Butyl Ether (MtBE), and lead. Both TPH-g and MtBE were detected at 160 parts per million in the groundwater sample. MtBE was detected at 190 parts per billion in the soil sample collected from the removed product line adjacent to the pump island.

Since December 2000, the Site has been monitored on a quarterly basis. Historically, TPH-g and BTEX groundwater constituents have remained below the laboratory reporting limit. MtBE groundwater constituents have either been at non-detectable laboratory levels or near non-detectable laboratory levels.

In March 2004, Jim Glomb Geotechnical and Environmental Consulting of Sebastopol, California installed five additional wells (MW-4 through MW-8) at the Site. Figure 2 shows the locations of the monitoring wells.

On December 20, 2005, SOMA oversaw Gregg Drilling & Testing, Inc. (Gregg) install monitoring well MW-9. Due to the rainy weather and the locations of off-site wells MW-10 and MW-11, the installation of these wells was conducted on January 26, 2006. On February 3, 2006, SOMA developed wells MW-9 to MW-11. On February 22, 2006, Harrington Surveys, Inc. (Harrington) horizontally and vertically surveyed the wells in accordance with coordinate values based on the California Coordinate System (NAD-83 and NGVD-88). Harrington's report is included in Appendix B.

## **2.0 RESULTS**

The following sections provide the results of the field measurements and laboratory analyses for the May 17 and 18, 2006 groundwater monitoring event.

### **2.1 Field Measurements**

Table 1 presents the calculated groundwater elevations, as well as, the depths to groundwater for each monitoring well. Depths to groundwater ranged from 2.08 feet in well MW-11 to 4.15 feet in well MW-4. The corresponding groundwater elevations ranged from 96.09 feet in well MW-11 to 100.99 feet in well MW-1.

Figure 3 displays the contour map of groundwater elevations. The groundwater flow direction remained south to southwesterly across the Site, however, the gradient decreased to 0.025 feet/feet.

The field measurements taken during this monitoring event are shown in Appendix B.

Refer to Table 1 for further historical groundwater elevation trends.

### **2.2 Laboratory Analyses**

Based on the approval of the Sonoma County Department of Environmental Health Division, in a letter dated October 25, 2005, the only required constituent for analytical testing during the quarterly monitoring events is MtBE, with the exception of TBA in well MW-8. Therefore, gasoline oxygenates were further tested for in well MW-8. To determine their off-site migration, if any, gasoline oxygenates were also tested for in wells MW-9 to MW-11.

MtBE was below the laboratory reporting limit in all of the groundwater samples collected during this monitoring event, with the exception of the samples collected from wells MW-2, MW-3, MW-7, and MW-8. MtBE was detected in

wells MW-2, MW-3, MW-7, and MW-8 at 2.54 ug/L, 1.01 ug/L, 0.90 ug/L, and 27 ug/L, respectively. Figure 4 displays the contour map of MtBE concentrations in the groundwater.

All gasoline oxygenates were below the laboratory reporting limit in tested wells MW-8 to MW-11.

Appendix C shows the groundwater laboratory report for this monitoring event. Tables 1 and 2 show the historical groundwater analytical data for the quarterly monitoring events.

### **3.0 CONCLUSIONS & RECOMMENDATIONS**

The findings of the Second Quarter 2006 groundwater monitoring event can be summarized as follows:

- The groundwater flow direction still remains south to southwesterly across the Site.
- MtBE has remained at trace concentrations or below the laboratory reporting limit throughout the Site.
- Based on the analytical results, both MtBE and gasoline oxygenates do not appear to have migrated off-site to wells MW-9 to MW-11 during the Second Quarter 2006.
- SOMA recommends a no further action (NFA) status be adopted by Sonoma County for this site.

### **4.0 REPORT LIMITATIONS**

This report is the summary of work done by SOMA, including observations and descriptions of the Site's conditions. It includes the analytical results produced by Pacific Analytical Laboratory for the current groundwater monitoring event. The number and location of the wells were selected to provide the required information, but may not be completely representative of the entire site's conditions. All conclusions and recommendations are based on the results of the laboratory analysis. Conclusions beyond those specifically stated in this document should not be inferred from this report.

SOMA warrants that the services provided were done in accordance with the generally accepted practices in the environmental engineering and consulting field at the time of this sampling.



# Tables

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**TPH-g, BTEX, & MtBE**  
**Bill's Deli and Market**  
**3705 Gravenstein Hwy. South, Sebastopol, California**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B (µg/L)
<b>MW-1</b>	3/30/2004	101.69	4.30	97.39	<50	<0.5	<0.5	<0.5	<1.5	<1.0
	11/16/2004	101.69	NM	NM	NA	NA	NA	NA	NA	NA
	2/18/2005	101.69	NM	NM	NA	NA	NA	NA	NA	NA
	5/6/2005	101.69	NM	NM	NA	NA	NA	NA	NA	NA
	8/5/2005	101.69	NM	NM	NA	NA	NA	NA	NA	NA
	11/5/2005	101.69	NM	NM	NA	NA	NA	NA	NA	NA
	2/15/2006	104.32	2.04	102.28	NA	NA	NA	NA	NA	<0.5
	<b>5/18/2006</b>	<b>104.32</b>	<b>3.33</b>	<b>100.99</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>&lt;0.5</b>
<b>MW-2</b>	3/30/2004	101.08	2.90	98.18	<50	<0.5	<0.5	<0.5	<1.5	11
	11/16/2004	101.08	10.09	90.99	<50	<0.5	<0.5	<0.5	<1	49
	2/18/2005	101.08	3.02	98.06	<200	<0.5	<0.5	<0.5	<1.0	12.40
	5/6/2005	101.08	4.00	97.08	<200	<0.5	<0.5	<0.5	<1.0	3.66
	8/5/2005	101.08	7.29	93.79	<50	<0.5	<2.0	<0.5	<1.0	1.24
	11/5/2005	101.08	9.63	91.45	NA	NA	NA	NA	NA	12
	2/15/2006	103.56	2.35	101.21	NA	NA	NA	NA	NA	2.53
	<b>5/18/2006</b>	<b>103.56</b>	<b>3.06</b>	<b>100.50</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>2.54</b>

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**TPH-g, BTEX, & MtBE**  
**Bill's Deli and Market**  
**3705 Gravenstein Hwy. South, Sebastopol, California**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B (µg/L)
<b>MW-3</b>	3/30/2004	100.82	3.75	97.07	<50	<0.5	<0.5	<0.5	<1.5	15
	11/16/2004	100.82	9.87	90.95	<50	<0.5	<0.5	<0.5	<1	126
	2/18/2005	100.82	2.56	98.26	<200	<0.5	<0.5	<0.5	<1.0	4.70
	5/6/2005	100.82	2.92	97.90	<200	<0.5	<0.5	<0.5	<1.0	6.45
	8/5/2005	100.82	7.61	93.21	<50	<0.5	<2.0	<0.5	<1.0	9.96
	11/5/2005	100.82	9.60	91.22	NA	NA	NA	NA	NA	2.60
	2/15/2006	103.22	2.20	101.02	NA	NA	NA	NA	NA	0.86
	<b>5/18/2006</b>	<b>103.22</b>	<b>3.11</b>	<b>100.11</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>1.01</b>
<b>MW-4</b>	3/30/2004	102.36	2.75	99.61	<50	<0.5	<0.5	<0.5	<1.5	<1.0
	11/16/2004	102.36	11.39	90.97	<50	<0.5	<0.5	<0.5	<1	<0.5
	2/18/2005	102.36	2.04	100.32	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	5/6/2005	102.36	3.79	98.57	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	8/5/2005	102.36	8.95	93.41	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	11/5/2005	102.36	11.08	91.28	NA	NA	NA	NA	NA	<0.5
	2/15/2006	104.78	2.24	102.54	NA	NA	NA	NA	NA	<0.5
	<b>5/18/2006</b>	<b>104.78</b>	<b>4.15</b>	<b>100.63</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>&lt;0.5</b>
<b>MW-5</b>	3/30/2004	100.60	3.60	97.00	<50	<0.5	<0.5	<0.5	<1.5	<1.0
	11/16/2004	100.60	NM	NM	NA	NA	NA	NA	NA	NA
	2/18/2005	100.60	3.46	97.14	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	5/6/2005	100.60	3.75	96.85	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	8/5/2005	100.60	4.69	95.91	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	11/5/2005	100.60	9.46	91.14	NA	NA	NA	NA	NA	<0.5
	2/15/2006	102.98	2.31	100.67	NA	NA	NA	NA	NA	<0.5
	<b>5/18/2006</b>	<b>102.98</b>	<b>3.64</b>	<b>99.34</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>&lt;0.5</b>

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**TPH-g, BTEX, & MtBE**  
**Bill's Deli and Market**  
**3705 Gravenstein Hwy. South, Sebastopol, California**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B (µg/L)
<b>MW-6</b>	3/30/2004	99.72	3.85	95.87	<50	<0.5	<0.5	<0.5	<1.5	<1.0
	11/16/2004	99.72	8.76	90.96	<50	<0.5	<0.5	<0.5	<1	<0.5
	2/18/2005	99.72	1.93	97.79	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	5/6/2005	99.72	2.77	96.95	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	8/5/2005	99.72	6.15	93.57	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	11/5/2005	99.72	8.58	91.14	NA	NA	NA	NA	NA	<0.5
	2/15/2006	102.16	1.92	100.24	NA	NA	NA	NA	NA	<0.5
	<b>5/18/2006</b>	<b>102.16</b>	<b>3.26</b>	<b>98.90</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>&lt;0.5</b>
<b>MW-7</b>	3/30/2004	99.30	4.10	95.20	<50	<0.5	<0.5	<0.5	<1.5	<1.0
	11/16/2004	99.30	8.35	90.95	<50	<0.5	<0.5	<0.5	<1	4.8
	2/18/2005	99.30	2.09	97.21	<200	<0.5	<0.5	<0.5	<1.0	0.86
	5/6/2005	99.30	2.40	96.90	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	8/5/2005	99.30	6.39	92.91	<50	<0.5	<2.0	<0.5	<1.0	1.31
	11/5/2005	99.30	8.41	90.89	NA	NA	NA	NA	NA	2.35
	2/15/2006	101.86	1.60	100.26	NA	NA	NA	NA	NA	0.75
	<b>5/17/2006</b>	<b>101.86</b>	<b>2.67</b>	<b>99.19</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>0.90</b>
<b>MW-8</b>	3/30/2004	98.78	3.20	95.58	<50	<0.5	<0.5	<0.5	<1.5	44
	11/16/2004	98.78	6.44	92.34	<50	<0.5	<0.5	<0.5	<1	59
	2/18/2005	98.78	2.53	96.25	<200	<0.5	<0.5	<0.5	<1.0	69
	5/6/2005	98.78	3.24	95.54	<200	<0.5	<0.5	<0.5	<1.0	61.8
	8/5/2005	98.78	6.42	92.36	<50	<0.5	<2.0	<0.5	<1.0	38
	11/5/2005	98.78	6.32	92.46	NA	NA	NA	NA	NA	38.6
	2/15/2006	101.23	2.21	99.02	NA	NA	NA	NA	NA	31
	<b>5/17/2006</b>	<b>101.23</b>	<b>3.61</b>	<b>97.62</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>27</b>

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**TPH-g, BTEX, & MtBE**  
**Bill's Deli and Market**  
**3705 Gravenstein Hwy. South, Sebastopol, California**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B (µg/L)
<b>MW-9</b>	2/15/2006	100.76	7.40	93.36	NA	NA	NA	NA	NA	0.55
	5/17/2006	100.76	3.00	97.76	NA	NA	NA	NA	NA	<0.5
<b>MW-10</b>	2/15/2006	98.95	3.95	95.00	NA	NA	NA	NA	NA	<0.5
	5/17/2006	98.95	2.62	96.33	NA	NA	NA	NA	NA	<0.5
<b>MW-11</b>	2/15/2006	98.17	7.60	90.57	NA	NA	NA	NA	NA	<0.5
	5/17/2006	98.17	2.08	96.09	NA	NA	NA	NA	NA	<0.5

Notes:

The first time SOMA monitored this site was in the Fourth Quarter 2004.

The first time SOMA monitored wells off-site wells MW-9 to MW-11 was in the First Quarter 2006.

Wells MW-9 to MW-11 were installed by SOMA in December 2005.

By request of Sonoma County Department of Health Services only MtBE was required as of the Fourth Quarter 2005.

1. All site wells resurveyed by Harrington Surveys, Inc in February 2006.

NA: Not Analyzed. Well MW-1 was buried due to construction activities, however, the well was uncovered and has monitored since Feb. 2006.

NA: Not Analyzed. Well MW-5 was inaccessible due to blockage at 5 feet bgs, however, the blockage was cleared and has monitored since Feb. 2005.

NM: Not Measured.

**Table 2**  
**Historical Groundwater Analytical Results**  
**Gasoline Oxygenates, Ethanol, Lead Scavengers**  
**Bill's Deli and Market**  
**3705 Gravenstein Hwy. South, Sebastopol, California**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
<b>MW-1</b>	3/30/2004	<25	<1.0	<1.0	<1.0	NA	NA	NA
	11/16/2004	NA	NA	NA	NA	NA	NA	NA
	2/18/2005	NA	NA	NA	NA	NA	NA	NA
	5/6/2005	NA	NA	NA	NA	NA	NA	NA
	8/5/2005	NA	NA	NA	NA	NA	NA	NA
	11/5/2005	NA	NA	NA	NA	NA	NA	NA
	2/16/2006 5/18/2006	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
<b>MW-2</b>	3/30/2004	<25	<1.0	<1.0	<1.0	NA	NA	NA
	11/16/2004	<2.5	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	2/18/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	5/6/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/5/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/5/2005	NA	NA	NA	NA	NA	NA	NA
	2/16/2006 5/18/2006	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
<b>MW-3</b>	3/30/2004	<25	<1.0	<1.0	<1.0	NA	NA	NA
	11/16/2004	<2.5	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	2/18/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	5/6/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/5/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/5/2005	NA	NA	NA	NA	NA	NA	NA
	2/16/2006 5/18/2006	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
<b>MW-4</b>	3/30/2004	<25	<1.0	<1.0	<1.0	NA	NA	NA
	11/16/2004	<2.5	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	2/18/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	5/6/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/5/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/5/2005	NA	NA	NA	NA	NA	NA	NA
	2/16/2006 5/18/2006	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA

**Table 2**  
**Historical Groundwater Analytical Results**  
**Gasoline Oxygenates, Ethanol, Lead Scavengers**  
**Bill's Deli and Market**  
**3705 Gravenstein Hwy. South, Sebastopol, California**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
<b>MW-5</b>	3/30/2004	<25	<1.0	<1.0	<1.0	NA	NA	NA
	11/16/2004	NA	NA	NA	NA	NA	NA	NA
	2/18/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	5/6/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/5/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/5/2005	NA	NA	NA	NA	NA	NA	NA
	2/16/2006	NA	NA	NA	NA	NA	NA	NA
	<b>5/18/2006</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>MW-6</b>	3/30/2004	<25	<1.0	<1.0	<1.0	NA	NA	NA
	11/16/2004	<2.5	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	2/18/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	5/6/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/5/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/5/2005	NA	NA	NA	NA	NA	NA	NA
	2/16/2006	NA	NA	NA	NA	NA	NA	NA
	<b>5/18/2006</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>MW-7</b>	3/30/2004	<25	<1.0	<1.0	<1.0	NA	NA	NA
	11/16/2004	<2.5	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	2/18/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	5/6/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/5/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/5/2005	NA	NA	NA	NA	NA	NA	NA
	2/16/2006	NA	NA	NA	NA	NA	NA	NA
	<b>5/17/2006</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>MW-8</b>	3/30/2004	<25	<1.0	<1.0	<1.0	NA	NA	NA
	11/16/2004	<2.5	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	2/18/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	5/6/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/5/2005	11.60	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/5/2005	<10	NA	NA	NA	NA	NA	NA
	2/16/2006	<10	<0.5	<0.5	<2.0	NA	<0.5	<0.5
	<b>5/17/2006</b>	<b>&lt;10</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;2.0</b>	<b>NA</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>

**Table 2**  
**Historical Groundwater Analytical Results**  
**Gasoline Oxygenates, Ethanol, Lead Scavengers**  
**Bill's Deli and Market**  
**3705 Gravenstein Hwy. South, Sebastopol, California**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
<b>MW-9</b>	2/16/2006	<10	<0.5	<0.5	<2.0	NA	<0.5	<0.5
	5/17/2006	<10	<0.5	<0.5	<2.0	NA	<0.5	<0.5
<b>MW-10</b>	2/16/2006	<10	<0.5	<0.5	<2.0	NA	<0.5	<0.5
	5/17/2006	<10	<0.5	<0.5	<2.0	NA	<0.5	<0.5
<b>MW-11</b>	2/16/2006	<10	<0.5	<0.5	<2.0	NA	<0.5	<0.5
	5/17/2006	<10	<0.5	<0.5	<2.0	NA	<0.5	<0.5

**Notes:**

The first time SOMA monitored this site was in the Fourth Quarter 2004.

The first time SOMA monitored wells off-site wells MW-9 to MW-11 was in the First Quarter 2006.

Wells MW-9 to MW-11 were installed by SOMA in December 2005.

NA: Not Analyzed. Well MW-5 was inaccessible due to blockage at 5 feet bgs, however, the blockage was cleared and gasoline oxygenates were tested from 2/2005 to 8/2005.

By request of Sonoma County Department of Health Services,

TBA was required in only the sample collected from well MW-8 as of the Fourth Quarter 2005.

**Gasoline Oxygenates**

TBA: tertiary Butyl Alcohol

DIPE: Diisopropyl Ether

ETBE: Ethyl tertiary Butyl Ether

TAME: Methyl tertiary Amyl Ether

**Alcohols**

Ethanol

Methanol Tested for in Fourth Quarter 2004, see Monitoring Report for results.

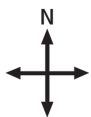
**Lead Scavengers**

1,2-DCA: 1,2-Dichloroethane

EDB: 1,2-Dibromoethane



# Figures



approximate scale in feet  
0 70 140

Figure 1: Site vicinity map.

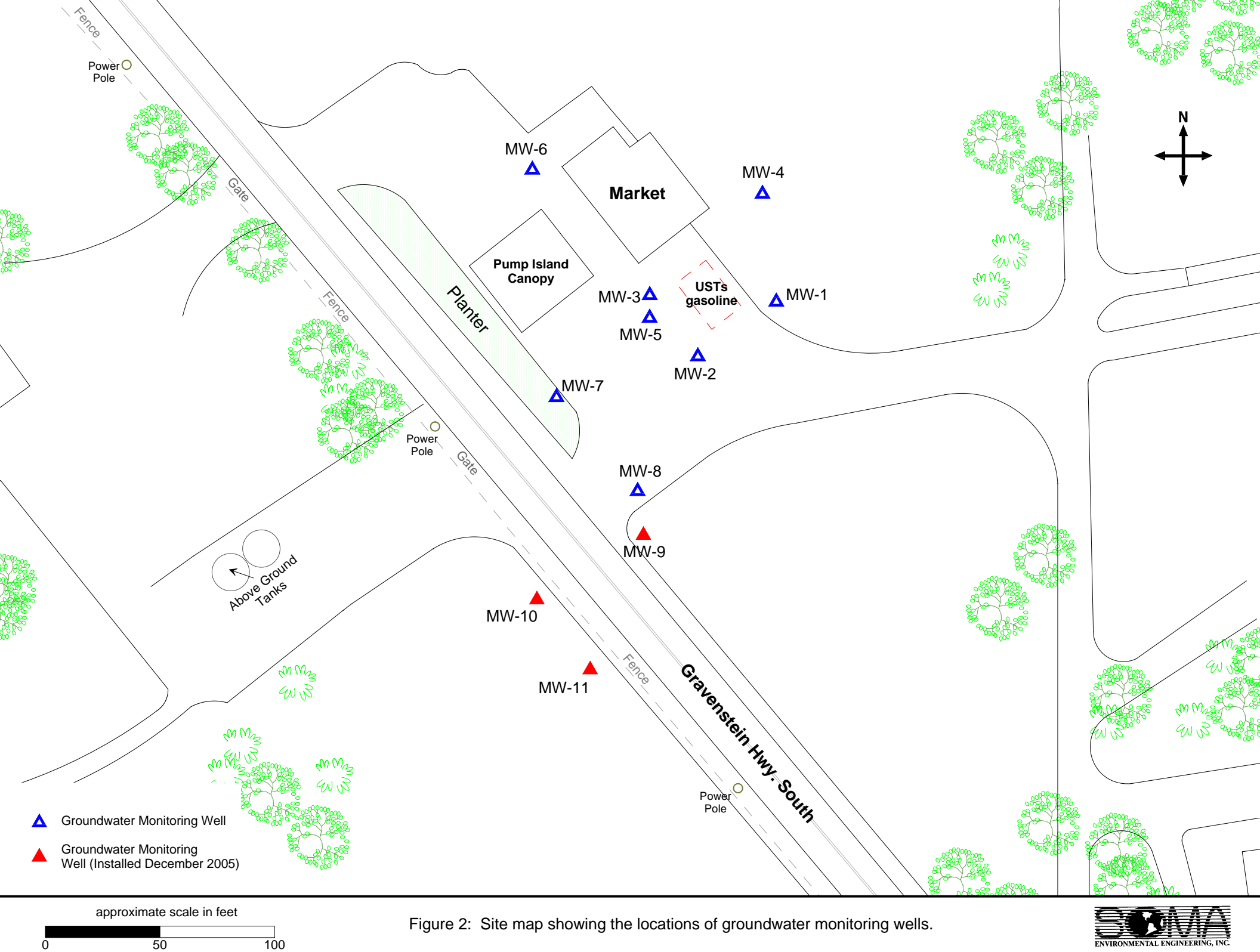


Figure 2: Site map showing the locations of groundwater monitoring wells.

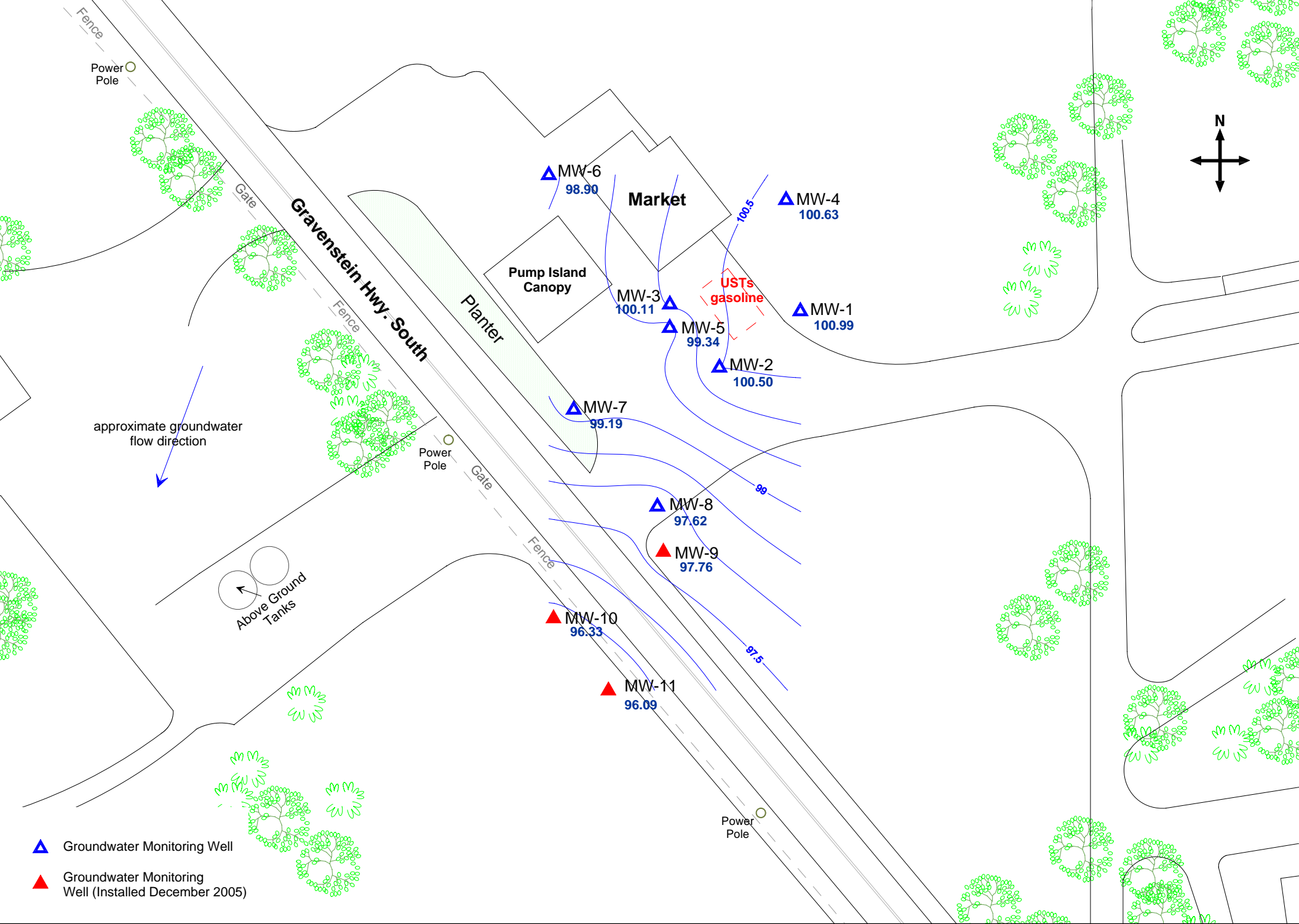


Figure 3: Groundwater elevation contour map in feet. May 17, 2006.

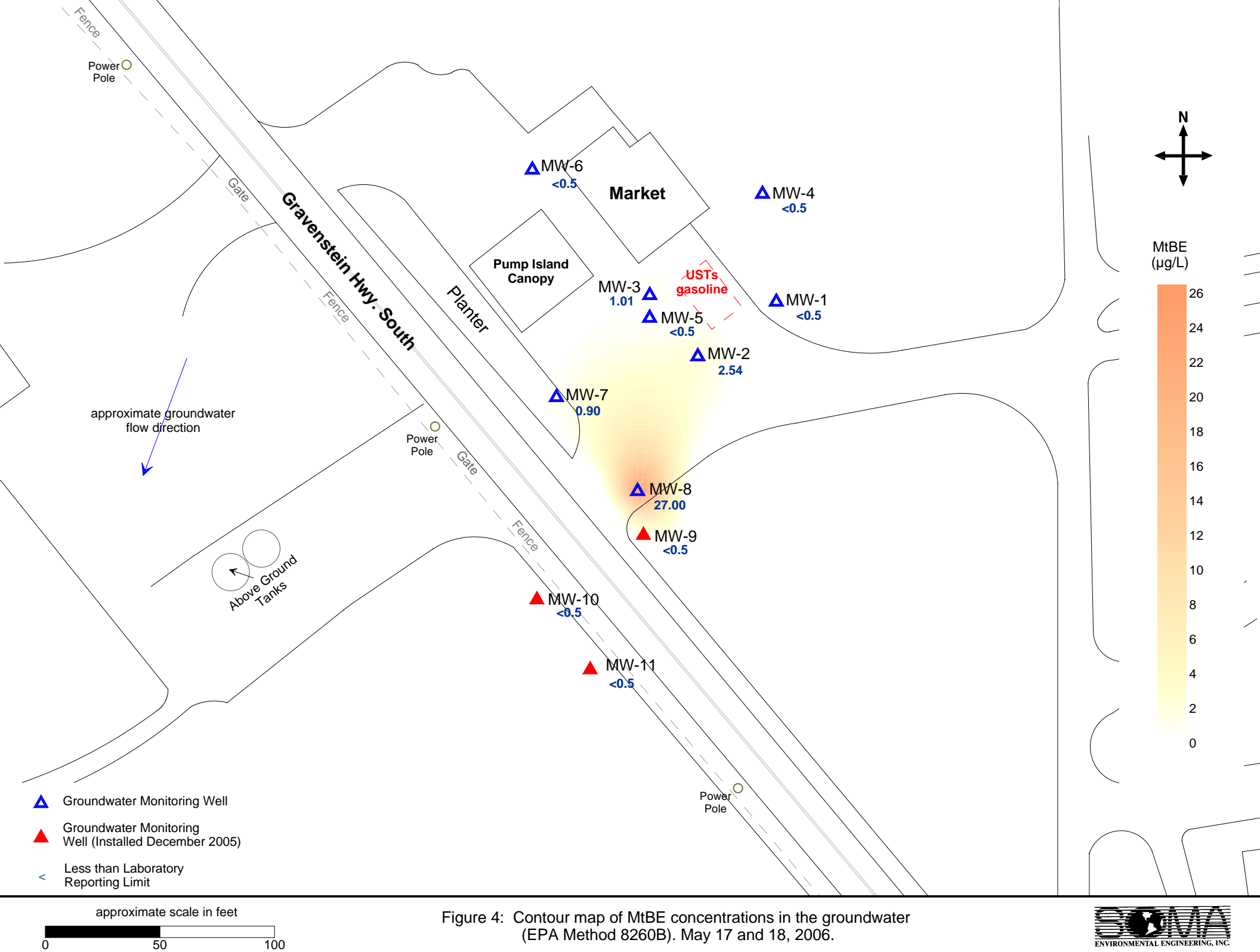


Figure 4: Contour map of MtBE concentrations in the groundwater (EPA Method 8260B). May 17 and 18, 2006.

# Appendix A

## SOMA's Groundwater Monitoring Procedures

## **Field Activities**

On May 17, 2006, a total of eleven wells (MW-1 to MW-11) were measured for depth to groundwater. On May 17 and 18, 2006, additional field measurements and grab groundwater samples were collected from all of the monitoring wells. This monitoring event was conducted in accordance with the procedures and guidelines of the SCDEH and the CRWQCB.

Prior to measuring the groundwater depth at each well, equalization with the surrounding aquifer was achieved. The well cap was removed from each well, and the pressure in each well was then allowed to dissipate. This allowed for a more stable water table level within the well. After a few minutes, and once the water level in the well stabilized, the depth to groundwater in each monitoring well was measured from the top of the casing to the nearest 0.01 foot using an electric sounder.

The top of the casing elevation data and the depth to groundwater in each monitoring well were used to calculate the groundwater elevation. The top of casing elevation was based on elevation data of 141.99 feet NGVD88. The survey datum was based on California Coordinate System, Zone 2, NAD 83. Appendix B shows the survey datum.

Prior to the collection of samples, each well was purged using a battery operated 2-inch diameter pump (Model ES-60 DC). In order to ensure that the final samples were in equilibrium with (and representative of) the surrounding groundwater, during purging, several samples were taken for field measurements of pH, temperature and EC. The field parameters were measured using a Hanna pH, conductivity, and temperature meter. The equipment was calibrated at the Site using standard solutions and procedures provided by the manufacturer.

Appendix B details the field measurements taken during the monitoring event.

The purging of the wells continued until the parameters for pH, temperature and EC stabilized or three casing volumes were purged. A disposable polyethylene bailer was used to collect sufficient samples from each well for laboratory analyses. The groundwater sample was transferred to three 40-mL VOA vials and preserved with hydrochloric acid. The vials were then sealed to prevent the development of air bubbles within the headspace.

After the groundwater samples were collected they were placed on ice in an ice chest and maintained at 4<sup>0</sup>C. A chain of custody (COC) form was written for all the samples. After the sampling was complete, on May 18, 2006, SOMA's field crew delivered the groundwater samples along with the COC form to Pacific Analytical Laboratory in Alameda, California.



### **Laboratory Analysis**

Pacific Analytical Laboratory, in Alameda, California, a state-certified laboratory, analyzed all of the groundwater samples for MtBE, and gasoline oxygenates for wells (MW-8 to MW-11). All referenced constituents were analyzed using EPA Method 8260B.



# **Appendix B**

Table of Elevations & Coordinates on Monitoring Wells  
Measured by Harrington Surveys, Inc.,  
and  
Field Measurements of Physical and Chemical  
Parameters of Groundwater Samples

## ***Harrington Surveys Inc.***

### ***Land Surveying & Mapping***

2278 Larkey Lane, Walnut Creek, Ca. 94597 Phone (925)935-7228 Fax (925)935-5118  
Cell (925)788-7359 E-Mail (ben5132@pacbell.net)

SOMA ENVIRONMENTAL ENGINEERING  
6620 OWENS DR. # A  
PLEASANTON, CA. 994588

FEB. 22, 2006

ATTN: ELENA

3705 GRAVENSTEIN HWY. S.  
SEBASTOPOL CA.

### **SURVEY REPORT**

CONTROLLING POINTS FROM SURVEY BY HARRINGTON SURVEYS INC., DATED 02-22-06

CONTROL PT.# RTCM-Ref 00001, CALIFORNIA COORDINATE SYSTEM, ZONE 2. NAD 83.

NORTH 1,923,182.24 - EAST 6,347,713.99, LAT. N38°26'26.398182" LONG. W122°44'49.151219".

ELEVATION 141.99, NGVD 88,

CONTROL PT. # BM37 M, CALIFORNIA COORDINATE SYSTEM, ZONE 2, NAD 83.

NORTH 1,908,814.18 - EAST 6,325,739.51 LAT N38°24'02.495544", LONG. W122°49'23.696136".

ELEVATION 80.79, NGVD 88,

#### **INSTRUMENTATION:**

TRIMBLE GPS, MODEL 5800 AND LEICA TCA 1800, 1" HORZ. & VERT.

OBSERVATION: EPOCH = 180.

FIELD SURVEY: FEB. 22, 2006.

BEN HARRINGTON  
PLS 5132

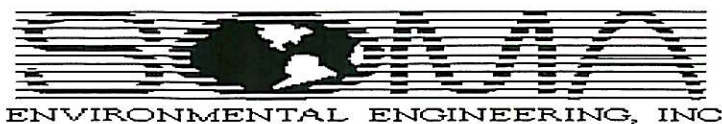


3705 GRAVENSTEIN HWY S  
SEBASTOPOL, CA.  
MONITORING WELLS

HARRINGTON SURVEYS INC.  
2278 LARKEY LANE  
WALNUT CREEK CA. 94597

JOB # 2626  
FEB. 22, 2006

DESCRIPTION	NORTH	EAST	ELEV.	LATITUDE ° ' " N.	LONGITUDE ° ' " W.	LATITUDE DEC.° N.	LONGITUDE DEC.° W.
BM37 M	1908814.18	6325739.51	80.79	38 24 2.495544 N	122 49 23.696136 W	38.406932067 N	122.823248927 W
MW 1 NOTCH	1895108.56	6338406.62	104.32	38 21 48.121599 N	122 46 43.105958 W	38.363367111 N	122.778640544 W
MW 1 PAV	1895107.90	6338406.95	104.62	38 21 48.115126 N	122 46 43.101680 W	38.363365313 N	122.761972689 W
MW 1 PUNCH	1895108.72	6338406.51	104.52	38 21 48.123127 N	122 46 43.107264 W	38.363367535 N	122.778640907 W
MW 2 NOTCH	1895082.79	6338370.10	103.56	38 21 47.863738 N	122 46 43.561694 W	38.363295483 N	122.778767137 W
MW 2 PAV	1895083.51	6338370.11	103.72	38 21 47.870913 N	122 46 43.561599 W	38.363297476 N	122.778767111 W
MW 2 PUNCH	1895082.94	6338369.77	103.71	38 21 47.865221 N	122 46 43.565746 W	38.363295895 N	122.778768263 W
MW 3 NOTCH	1895110.21	6338351.89	103.22	38 21 48.133241 N	122 46 43.793237 W	38.363370345 N	122.778831455 W
MW 3 PAV	1895110.38	6338351.59	103.48	38 21 48.134958 N	122 46 43.797017 W	38.363370822 N	122.778832505 W
MW 3 PUNCH	1895110.37	6338351.77	103.49	38 21 48.134865 N	122 46 43.794709 W	38.363370796 N	122.778831864 W
MW 4 NOTCH	1895155.10	6338400.94	104.78	38 21 48.581128 N	122 46 43.182262 W	38.363494758 N	122.778661739 W
MW 4 PAV	1895154.46	6338400.78	104.97	38 21 48.574778 N	122 46 43.184230 W	38.363492994 N	122.778662286 W
MW 4 PUNCH	1895155.31	6338400.84	105.02	38 21 48.583234 N	122 46 43.183472 W	38.363495343 N	122.778662076 W
MW 5 NOTCH	1895100.08	6338350.97	102.98	38 21 48.033062 N	122 46 43.803686 W	38.363342517 N	122.778834357 W
MW 5 PAV	1895099.78	6338350.09	103.47	38 21 48.029976 N	122 46 43.814682 W	38.363341660 N	122.778837412 W
MW 5 PUNCH	1895100.23	6338350.73	103.44	38 21 48.034486 N	122 46 43.806679 W	38.363342913 N	122.778835189 W
MW 6 NOTCH	1895166.15	6338293.98	102.16	38 21 48.681278 N	122 46 44.526314 W	38.363522577 N	122.779035087 W
MW 6 PAV	1895165.38	6338294.38	102.45	38 21 48.673746 N	122 46 44.521152 W	38.363520485 N	122.779033653 W
MW 6 PUNCH	1895166.50	6338293.71	102.41	38 21 48.684713 N	122 46 44.529758 W	38.363523531 N	122.779036044 W
MW 7 NOTCH	1895066.22	6338308.09	101.86	38 21 47.694705 N	122 46 44.338438 W	38.363248529 N	122.778982899 W
MW 7 PAV	1895065.57	6338308.29	102.23	38 21 47.688353 N	122 46 44.335838 W	38.363246765 N	122.778982177 W
MW 7 PUNCH	1895066.37	6338307.93	102.14	38 21 47.696173 N	122 46 44.340430 W	38.363248937 N	122.778983453 W
MW 8 NOTCH	1895017.00	6338346.08	101.23	38 21 47.211430 N	122 46 43.856079 W	38.363114286 N	122.778848911 W
MW 8 PAV	1895017.30	6338346.51	101.53	38 21 47.214393 N	122 46 43.850759 W	38.363115109 N	122.778847433 W
MW 8 PUNCH	1895017.22	6338345.88	101.46	38 21 47.213542 N	122 46 43.858669 W	38.363114873 N	122.778849630 W
MW 9 NOTCH	1894997.31	6338349.41	100.76	38 21 47.017098 N	122 46 43.812267 W	38.363060305 N	122.778836741 W
MW 9 PAV	1894996.74	6338350.16	101.06	38 21 47.011531 N	122 46 43.802750 W	38.363058759 N	122.778834097 W
MW 9 PUNCH	1894997.58	6338349.21	101.12	38 21 47.019752 N	122 46 43.814754 W	38.363061042 N	122.778837432 W
MW 10 NOTCH	1894963.64	6338292.64	98.95	38 21 46.679447 N	122 46 44.521269 W	38.362966513 N	122.779033686 W
MW 10 PAV	1894962.90	6338292.78	99.23	38 21 46.672103 N	122 46 44.519462 W	38.362964473 N	122.779033184 W
MW 10 PUNCH	1894964.17	6338292.48	99.31	38 21 46.684632 N	122 46 44.523328 W	38.362967953 N	122.779034258 W
MW 11 NOTCH	1894934.05	6338313.45	98.17	38 21 46.388738 N	122 46 44.256813 W	38.362885761 N	122.778960226 W
MW 11 PAV	1894933.23	6338313.54	98.48	38 21 46.380599 N	122 46 44.255669 W	38.362883500 N	122.778959908 W
MW 11 PUNCH	1894934.42	6338313.23	98.52	38 21 46.392358 N	122 46 44.259710 W	38.362886766 N	122.778961031 W
RTCM-Ref 0001	1923182.24	6347713.99	141.99	38 26 26.398182 N	122 44 49.151219 W	38.440666162 N	122.746986450 W



Well No.: MW-1  
 Casing Diameter: 2 inches  
 Depth of Well: 24.64 feet  
 Top of Casing Elevation: 104.32 feet  
 Depth to Groundwater: 3.33 feet  
 Groundwater Elevation: 100.99 feet  
 Water Column Height: 21.31 feet  
 Purged Volume: 20 gallons

Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May ~~17~~ 18, 2006  
 Sampler: John Lohman  
 Eric Jennings

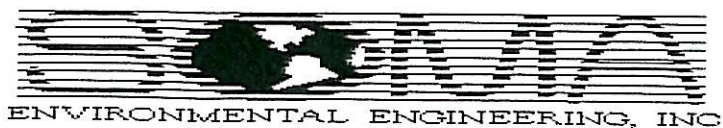
Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp (°C)	E.C. (μS/cm)
	(gallons)			
10 <sup>57</sup>	START PURGE			
10 <sup>59</sup>	4	5.09	16.94	127
10 <sup>57</sup>	8	4.79	16.53	179
11 <sup>00</sup>	12	4.75	16.85	223
11 <sup>03</sup>	16	4.90	17.20	169
11 <sup>06</sup>	20	4.89	17.49	161
11 <sup>08</sup>	SAMPLED			



Well No.: MW-2  
 Casing Diameter: 2 inches  
 Depth of Well: 29.70 feet  
 Top of Casing Elevation: 103.56 feet  
 Depth to Groundwater: 3.06 feet  
 Groundwater Elevation: 100.50 feet  
 Water Column Height: 21.64 feet  
 Purged Volume: 15 gallons

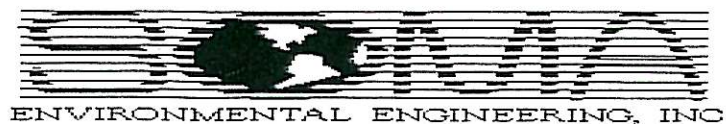
Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May ~~17~~ 18, 2006  
 Sampler: John Lohman  
 Eric Jennings

Purging Method: Bailer ☐ Pump ☒  
 Sampling Method: Bailer ☒ Pump ☐

Color: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp	E.C.
	(gallons)		(°C)	(µS/cm)
11 <sup>12</sup>	START	PURGE		
11 <sup>15</sup>	4	4.81	18.85	142
11 <sup>18</sup>	8	4.90	18.04	149
11 <sup>21</sup>	12	4.94	18.54	150
11 <sup>23</sup>	15	5.13	18.74	149
11 <sup>26</sup>	SAMPLED			



Well No.: MW-3  
 Casing Diameter: 2 inches  
 Depth of Well: 29.70 feet  
 Top of Casing Elevation: 102.22 feet  
 Depth to Groundwater: 3.11 feet  
 Groundwater Elevation: 100.11 feet  
 Water Column Height: 21.79 feet  
 Purged Volume: 12 gallons

Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May ~~17~~ 18, 2006  
 Sampler: John Lohman  
 Eric Jennings

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp	E.C.
	(gallons)		(°C)	(µS/cm)
12 <sup>06</sup>	START	PURGE		
12 <sup>09</sup>	4	5.19	18.76	153
12 <sup>12</sup>	8	5.20	18.00	151
12 <sup>15</sup>	12	5.15	18.03	152
12 <sup>17</sup>	SAMPLED			





Well No.: MW-4  
 Casing Diameter: 2 inches  
 Depth of Well: 27.65 feet  
 Top of Casing Elevation: 104.78 feet  
 Depth to Groundwater: 4.15 feet  
 Groundwater Elevation: 100.63 feet  
 Water Column Height: 20.50 feet  
 Purged Volume: 16 gallons

Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May 17<sup>th</sup> 18, 2006  
 Sampler: John Lohman  
 Eric Jennings

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

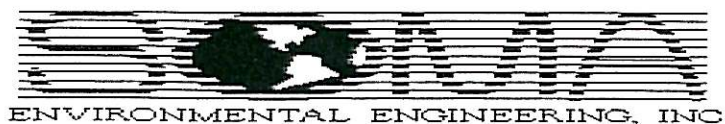
Color: No ☒ Yes ☐ Describe: \_\_\_\_\_

Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_

Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp	E.C.
	(gallons)		(°C)	(μS/cm)
10 <sup>31</sup>	START	FW208		
10 <sup>34</sup>	4	5.24	15.37	82
10 <sup>37</sup>	8	4.88	15.15	69
10 <sup>40</sup>	12	4.74	15.22	71
10 <sup>43</sup>	16	4.78	15.42	76
10 <sup>45</sup>	SAMPLED			



Well No.: MW-5  
 Casing Diameter: 2 inches  
 Depth of Well: 48.0 feet  
 Top of Casing Elevation: 102.98 feet  
 Depth to Groundwater: 3.64 feet  
 Groundwater Elevation: 99.34 feet  
 Water Column Height: 45.06 feet  
 Purged Volume: 24 gallons

Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May 18, 2006  
 Sampler: John Lohman  
 Eric Jennings

Purging Method: Bailer ☐ Pump ☒

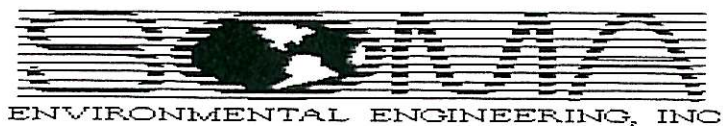
Sampling Method: Bailer ☒ Pump ☐

Color: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp	E.C.
	(gallons)		(°C)	(μS/cm)
11:37	START	PURGE		
11:41	6	5.50	19.30	331
11:45	12	5.64	19.20	340
11:50	18	5.70	19.25	340
11:56	24	5.73	19.20	335
11:58	SAMPLED			





Well No.: MW-6  
 Casing Diameter: 2 inches  
 Depth of Well: 24.50 feet  
 Top of Casing Elevation: 102.16 feet  
 Depth to Groundwater: 3.26 feet  
 Groundwater Elevation: 98.90 feet  
 Water Column Height: 21.24 feet  
 Purged Volume: 12 gallons

Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May ~~14~~ 18, 2006  
 Sampler: John Lohman  
 Eric Jennings

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: No ☒ Yes ☐ Describe: \_\_\_\_\_

Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_

Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp (°C)	E.C. (μS/cm)
	(gallons)			
12 <sup>22</sup>	START	PURGE		
12 <sup>24</sup>	4	4.89	18.42	97
12 <sup>26</sup>	8	4.86	18.33	142
12 <sup>29</sup>	12	4.85	18.15	128
12 <sup>31</sup>	SAMPLED			



Well No.: MW-7  
 Casing Diameter: 2 inches  
 Depth of Well: 27.50 feet  
 Top of Casing Elevation: 101.86 feet  
 Depth to Groundwater: 2.67 feet  
 Groundwater Elevation: 99.19 feet  
 Water Column Height: 21.83 feet  
 Purged Volume: 12 gallons

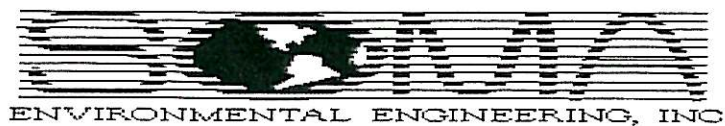
Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May 17 ~~18~~, 2006  
 Sampler: John Lohman  
 Eric Jennings

Purging Method: Bailer ☐ Pump ☒  
 Sampling Method: Bailer ☒ Pump ☐

Color: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp	E.C.
	(gallons)		(°C)	(µS/cm)
1 <sup>58</sup>	4.22	5.33	18.14	1130
2 <sup>01</sup>	4	5.33	18.14	1130
2 <sup>04</sup>	8	5.22	17.66	1250
2 <sup>07</sup>	12	5.42	18.41	877
'DRY' AT 12 GAL				
SAMPLED 2 <sup>10</sup>				



Well No.: NW-8  
 Casing Diameter: 2 inches  
 Depth of Well: 24.55 feet  
 Top of Casing Elevation: 101.23 feet  
 Depth to Groundwater: 3.61 feet  
 Groundwater Elevation: 97.62 feet  
 Water Column Height: 20.74 feet  
 Purged Volume: 20 gallons

Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May 17~~18~~, 2006  
 Sampler: John Lohman  
 Eric Jennings

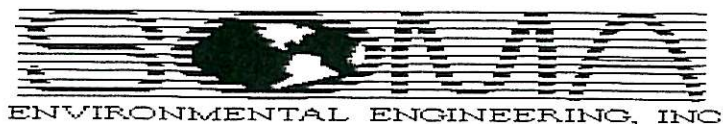
Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp	E.C.
	(gallons)		(°C)	(µS/cm)
1:39	START	FURGE		
1:37	4	5.49	18.67	511
1:40	8	5.05	17.76	537
1:43	12	5.70	17.63	735
1:46	16	5.68	18.11	856
1:47	20	5.76	18.30	801
1:51	SAMPLED			



Well No.: MW-9  
 Casing Diameter: 2 inches  
 Depth of Well: 24.48 feet  
 Top of Casing Elevation: 100.76 feet  
 Depth to Groundwater: 3.00 feet  
 Groundwater Elevation: 97.76 feet  
 Water Column Height: 21.98 feet  
 Purged Volume: 16 gallons

Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May 17~~18~~, 2006  
 Sampler: John Lohman  
 Eric Jennings

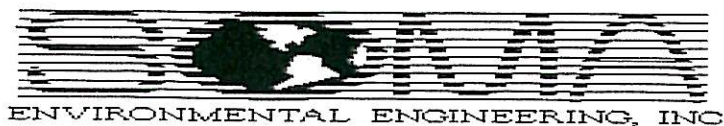
Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: No ☒ Yes ☒ Describe: Brown (silt) from 12-16 gal  
 Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp	E.C.
	(gallons)		(°C)	(µS/cm)
114	4 START PURGE			
117	4	5.96	16.51	1890
120	8	5.96	17.02	2130
123	12	6.10	17.75	1620
126	16	6.18	18.34	1790
'DRY' AT 16 GAL				
SAMPLED 129				



Well No.: NW-10  
 Casing Diameter: 2 inches  
 Depth of Well: 24.68 feet  
 Top of Casing Elevation: 98.95 feet  
 Depth to Groundwater: 2.62 feet  
 Groundwater Elevation: 96.33 feet  
 Water Column Height: 22.06 feet  
 Purged Volume: 20 gallons

Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May 17<sup>th</sup>, 2006  
 Sampler: John Lohman  
 Eric Jennings

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: No ☒ Yes ☐ Describe: \_\_\_\_\_

Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_

Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp	E.C.
	(gallons)		(°C)	(µS/cm)
12:47	START	IN RE-6		
12:52	4	5.98	16.37	796
12:55	8	5.33	16.28	800
12:58	12	5.73	16.36	799
1:01	16	5.65	16.47	801
1:04	20	5.63	16.55	800
1:06	SAMPLES			





Well No.: MW-11  
 Casing Diameter: 2 inches  
 Depth of Well: 29.32 feet  
 Top of Casing Elevation: 98.17 feet  
 Depth to Groundwater: 2.08 feet  
 Groundwater Elevation: 96.09 feet  
 Water Column Height: 22.29 feet  
 Purged Volume: 14 gallons

Project No.: 2871  
 Address: 3705 Gravenstein Hwy, South  
 Sebastopol, CA  
 Date: May 17~~18~~, 2006  
 Sampler: John Lohman  
 Eric Jennings

Purging Method: Bailer ☐ Pump ☒  
 Sampling Method: Bailer ☒ Pump ☐

Color: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Sheen: No ☒ Yes ☐ Describe: \_\_\_\_\_  
 Odor: No ☒ Yes ☐ Describe: \_\_\_\_\_

#### Field Measurements:

Time	Vol	pH	Temp	E.C.
	(gallons)		(°C)	(µS/cm)
12 <sup>27</sup>	START	PURGE		
12 <sup>29</sup>	3	7.68	15.58	572
12 <sup>32</sup>	7	7.12	16.20	596
12 <sup>35</sup>	11	6.67	16.61	506
12 <sup>37</sup>	14	6.49	16.73	582
'DRY' AT 14 GAL				
SAMPLED 12 <sup>40</sup>				

# **Appendix C**

Chain of Custody Form and Laboratory Report  
for the  
Second Quarter 2006 Monitoring Event

# CHAIN OF CUSTODY FORM

Page 1 of 1

**PAL** Pacific Analytical Laboratory  
851 West Midway Ave., Suite 201B  
Alameda, CA 94501  
510-864-0364 Telephone  
510-864-0365 Fax

PAL  
Login#

Project No: 2871				Sampler: <i>Eric Jennings / John Lehman</i>								Analyses/Method												
Project Name: 3705 Gravenstein Hwy. S. Sebastopol				Report To: Tony Perini								MTBE 8260B	Gasoline Oxygenates & Lead Scavengers											
				Company: SOMA Environmental Engineering, Inc.																				
Turnaround Time: Standard				Tel: 925-734-6400 Fax: 925-734-6401																				
		Sampling Date/Time		Matrix			# of Containers	Preservatives																
Lab No.	Sample ID	Date	Time	Soil	Water	Waste		HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE	Field Notes												
	MW-1	5/15/06	11:08 AM		X		3 VOAS	X			X	<i>grab sample</i>												
	MW-2	5/15/06	11:26 AM		X		3 VOAS	X			X									X				
	MW-3	5/15/06	12:17 PM		X		3 VOAS	X			X									X				
	MW-4	5/15/06	10:45 AM		X		3 VOAS	X			X									X				
	MW-5	5/15/06	11:55 AM		X		3 VOAS	X			X									X				
	MW-6	5/15/06	12:31 PM		X		3 VOAS	X			X									X				
	MW-7	5/17/06	2:10 PM		X		3 VOAS	X			X									X				
	MW-8	5/17/06	1:51 PM		X		3 VOAS	X			X									X	X			
	MW-9	5/17/06	1:29 PM		X		3 VOAS	X			X									X	X	X		
	MW-10	5/17/06	1:06 PM		X		3 VOAS	X			X									X	X	X		
	MW-11	5/17/06	12:40 PM		X		3 VOAS	X			X	X	X	X										
Sampler Remarks:							Relinquished by:		Date/Time:		Received by:		Date/Time:											
EDF Output Required TBA only on well MW-8 MtBE on all wells							<i>[Signature]</i>		5/15/06 2:10 PM		<i>James Zingis</i>		5/15/06 2:10 PM											





851 West Midway Ave. Suite 201  
Alameda, CA 94501

**Pacific Analytical Laboratory**

Phone (510) 864-0364

01 June 2006

Mansour Sepehr  
SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton, CA 94588

RE: 3705 Gravenstein Hwy. S., Sebastopol

Work Order Number: 6050011

This Laboratory report has been reviewed for technical correctness and completeness. This entire report was reviewed and approved by the Laboratory Director or the Director's designee, as verified by the following signature.

Sincerely,

A handwritten signature in black ink, appearing to read 'Maiid Akhavan', written over a horizontal line.

Maiid Akhavan  
Laboratory Director



SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton CA, 94588

Project: 3705 Gravenstein Hwy. S., Sebastopol  
Project Number: 2871  
Project Manager: Mansour Sepehr

**Reported:**  
01-Jun-06 14:11

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	6050011-01	Water	18-May-06 11:08	18-May-06 14:42
MW-2	6050011-02	Water	18-May-06 11:26	18-May-06 14:42
MW-3	6050011-03	Water	18-May-06 12:17	18-May-06 14:42
MW-4	6050011-04	Water	18-May-06 10:45	18-May-06 14:42
MW-5	6050011-05	Water	18-May-06 11:58	18-May-06 14:42
MW-6	6050011-06	Water	18-May-06 12:31	18-May-06 14:42
MW-7	6050011-07	Water	17-May-06 14:10	18-May-06 14:42
MW-8	6050011-08	Water	17-May-06 13:51	18-May-06 14:42
MW-9	6050011-09	Water	17-May-06 13:29	18-May-06 14:42
MW-10	6050011-10	Water	17-May-06 13:06	18-May-06 14:42
MW-11	6050011-11	Water	17-May-06 12:40	18-May-06 14:42



SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton CA, 94588

Project: 3705 Gravenstein Hwy. S., Sebastopol  
Project Number: 2871  
Project Manager: Mansour Sepehr

**Reported:**  
01-Jun-06 14:11

**Volatile Organic Compounds by EPA Method 8260B**  
**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (6050011-01) Water    Sampled: 18-May-06 11:08    Received: 18-May-06 14:42</b>									
MTBE	ND	0.500	ug/l	1	BE62301	18-May-06	18-May-06	8260B	
Surrogate: 4-Bromofluorobenzene		104 %	0-200		"	"	"	"	
Surrogate: Dibromofluoromethane		100 %	0-200		"	"	"	"	
Surrogate: Perdeuterotoluene		108 %	0-200		"	"	"	"	
<b>MW-2 (6050011-02) Water    Sampled: 18-May-06 11:26    Received: 18-May-06 14:42</b>									
MTBE	2.54	0.500	ug/l	1	BE62301	18-May-06	18-May-06	8260B	
Surrogate: 4-Bromofluorobenzene		102 %	0-200		"	"	"	"	
Surrogate: Dibromofluoromethane		104 %	0-200		"	"	"	"	
Surrogate: Perdeuterotoluene		108 %	0-200		"	"	"	"	
<b>MW-3 (6050011-03) Water    Sampled: 18-May-06 12:17    Received: 18-May-06 14:42</b>									
MTBE	1.01	0.500	ug/l	1	BE62301	18-May-06	18-May-06	8260B	
Surrogate: 4-Bromofluorobenzene		101 %	0-200		"	"	"	"	
Surrogate: Dibromofluoromethane		104 %	0-200		"	"	"	"	
Surrogate: Perdeuterotoluene		108 %	0-200		"	"	"	"	
<b>MW-4 (6050011-04) Water    Sampled: 18-May-06 10:45    Received: 18-May-06 14:42</b>									
MTBE	ND	0.500	ug/l	1	BE62301	18-May-06	18-May-06	8260B	
Surrogate: 4-Bromofluorobenzene		102 %	0-200		"	"	"	"	
Surrogate: Dibromofluoromethane		106 %	0-200		"	"	"	"	
Surrogate: Perdeuterotoluene		107 %	0-200		"	"	"	"	
<b>MW-5 (6050011-05) Water    Sampled: 18-May-06 11:58    Received: 18-May-06 14:42</b>									
MTBE	ND	0.500	ug/l	1	BE62301	18-May-06	18-May-06	8260B	
Surrogate: 4-Bromofluorobenzene		101 %	0-200		"	"	"	"	
Surrogate: Dibromofluoromethane		104 %	0-200		"	"	"	"	
Surrogate: Perdeuterotoluene		107 %	0-200		"	"	"	"	



SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton CA, 94588

Project: 3705 Gravenstein Hwy. S., Sebastopol  
Project Number: 2871  
Project Manager: Mansour Sepehr

**Reported:**  
01-Jun-06 14:11

## Volatiles Organic Compounds by EPA Method 8260B

### Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-6 (6050011-06) Water Sampled: 18-May-06 12:31 Received: 18-May-06 14:42</b>									
MTBE	ND	0.500	ug/l	1	BE62301	18-May-06	18-May-06	8260B	
Surrogate: 4-Bromofluorobenzene		103 %	0-200		"	"	"	"	
Surrogate: Dibromofluoromethane		108 %	0-200		"	"	"	"	
Surrogate: Perdeuterotoluene		108 %	0-200		"	"	"	"	
<b>MW-7 (6050011-07) Water Sampled: 17-May-06 14:10 Received: 18-May-06 14:42</b>									
MTBE	0.900	0.500	ug/l	1	BE62301	18-May-06	19-May-06	8260B	
Surrogate: 4-Bromofluorobenzene		103 %	0-200		"	"	"	"	
Surrogate: Dibromofluoromethane		108 %	0-200		"	"	"	"	
Surrogate: Perdeuterotoluene		107 %	0-200		"	"	"	"	
<b>MW-8 (6050011-08) Water Sampled: 17-May-06 13:51 Received: 18-May-06 14:42</b>									
MTBE	27.0	0.500	ug/l	1	BE62301	18-May-06	19-May-06	EPA 8260B	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"	"	"	
TBA	ND	10.0	"	"	"	"	"	"	
1,2-Dibromoethan	ND	0.500	"	"	"	"	"	"	
1,2-dichloroethane	ND	0.500	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	70-130		"	"	"	"	
Surrogate: Dibromofluoromethane		106 %	70-130		"	"	"	"	
Surrogate: Perdeuterotoluene		107 %	70-130		"	"	"	"	
<b>MW-9 (6050011-09) Water Sampled: 17-May-06 13:29 Received: 18-May-06 14:42</b>									
MTBE	ND	0.500	ug/l	1	BE62301	18-May-06	19-May-06	EPA 8260B	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"	"	"	
TBA	ND	10.0	"	"	"	"	"	"	
1,2-Dibromoethan	ND	0.500	"	"	"	"	"	"	
1,2-dichloroethane	ND	0.500	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	70-130		"	"	"	"	
Surrogate: Dibromofluoromethane		110 %	70-130		"	"	"	"	
Surrogate: Perdeuterotoluene		109 %	70-130		"	"	"	"	

Pacific Analytical Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton CA, 94588

Project: 3705 Gravenstein Hwy. S., Sebastopol  
Project Number: 2871  
Project Manager: Mansour Sepehr

**Reported:**  
01-Jun-06 14:11

### Volatile Organic Compounds by EPA Method 8260B

#### Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-10 (6050011-10) Water    Sampled: 17-May-06 13:06    Received: 18-May-06 14:42</b>									
MTBE	ND	0.500	ug/l	1	BE62301	18-May-06	19-May-06	EPA 8260B	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"	"	"	
TBA	ND	10.0	"	"	"	"	"	"	
1,2-Dibromoethan	ND	0.500	"	"	"	"	"	"	
1,2-dichloroethane	ND	0.500	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	70-130		"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		110 %	70-130		"	"	"	"	
<i>Surrogate: Perdeuterotoluene</i>		109 %	70-130		"	"	"	"	
<b>MW-11 (6050011-11) Water    Sampled: 17-May-06 12:40    Received: 18-May-06 14:42</b>									
MTBE	ND	0.500	ug/l	1	BE62301	18-May-06	19-May-06	EPA 8260B	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"	"	"	
TBA	ND	10.0	"	"	"	"	"	"	
1,2-Dibromoethan	ND	0.500	"	"	"	"	"	"	
1,2-dichloroethane	ND	0.500	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	70-130		"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		111 %	70-130		"	"	"	"	
<i>Surrogate: Perdeuterotoluene</i>		108 %	70-130		"	"	"	"	



SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton CA, 94588

Project: 3705 Gravenstein Hwy. S., Sebastopol  
Project Number: 2871  
Project Manager: Mansour Sepehr

**Reported:**  
01-Jun-06 14:11

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

#### Batch BE62301 - EPA 5030 Water MS

##### Blank (BE62301-BLK1)

Prepared & Analyzed: 23-May-06

Surrogate: 4-Bromofluorobenzene	51.4		ug/l	50.0		103	70-130			
Surrogate: Dibromofluoromethane	48.4		"	50.0		96.8	70-130			
Surrogate: Perdeuterotoluene	53.9		"	50.0		108	70-130			
MTBE	ND	0.500	"							
DIPE	ND	0.500	"							
ETBE	ND	0.500	"							
TAME	ND	2.00	"							
TBA	ND	10.0	"							
1,2-Dibromoethan	ND	0.500	"							
1,2-dichloroethane	ND	0.500	"							

##### LCS (BE62301-BS1)

Prepared & Analyzed: 23-May-06

Surrogate: 4-Bromofluorobenzene	54.2		ug/l	50.0		108	70-130			
Surrogate: Dibromofluoromethane	46.4		"	50.0		92.8	70-130			
Surrogate: Perdeuterotoluene	50.7		"	50.0		101	70-130			
MTBE	80.8	0.500	"	100		80.8	70-130			
ETBE	95.4	0.500	"	100		95.4	70-130			
TBA	502	10.0	"	500		100	70-130			

##### LCS Dup (BE62301-BSD1)

Prepared & Analyzed: 23-May-06

Surrogate: 4-Bromofluorobenzene	56.2		ug/l	50.0		112	70-130			
Surrogate: Dibromofluoromethane	49.1		"	50.0		98.2	70-130			
Surrogate: Perdeuterotoluene	50.7		"	50.0		101	70-130			
MTBE	89.4	0.500	"	100		89.4	70-130	10.1	20	
ETBE	102	0.500	"	100		102	70-130	6.69	20	
TBA	480	10.0	"	500		96.0	70-130	4.48	20	



SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton CA, 94588

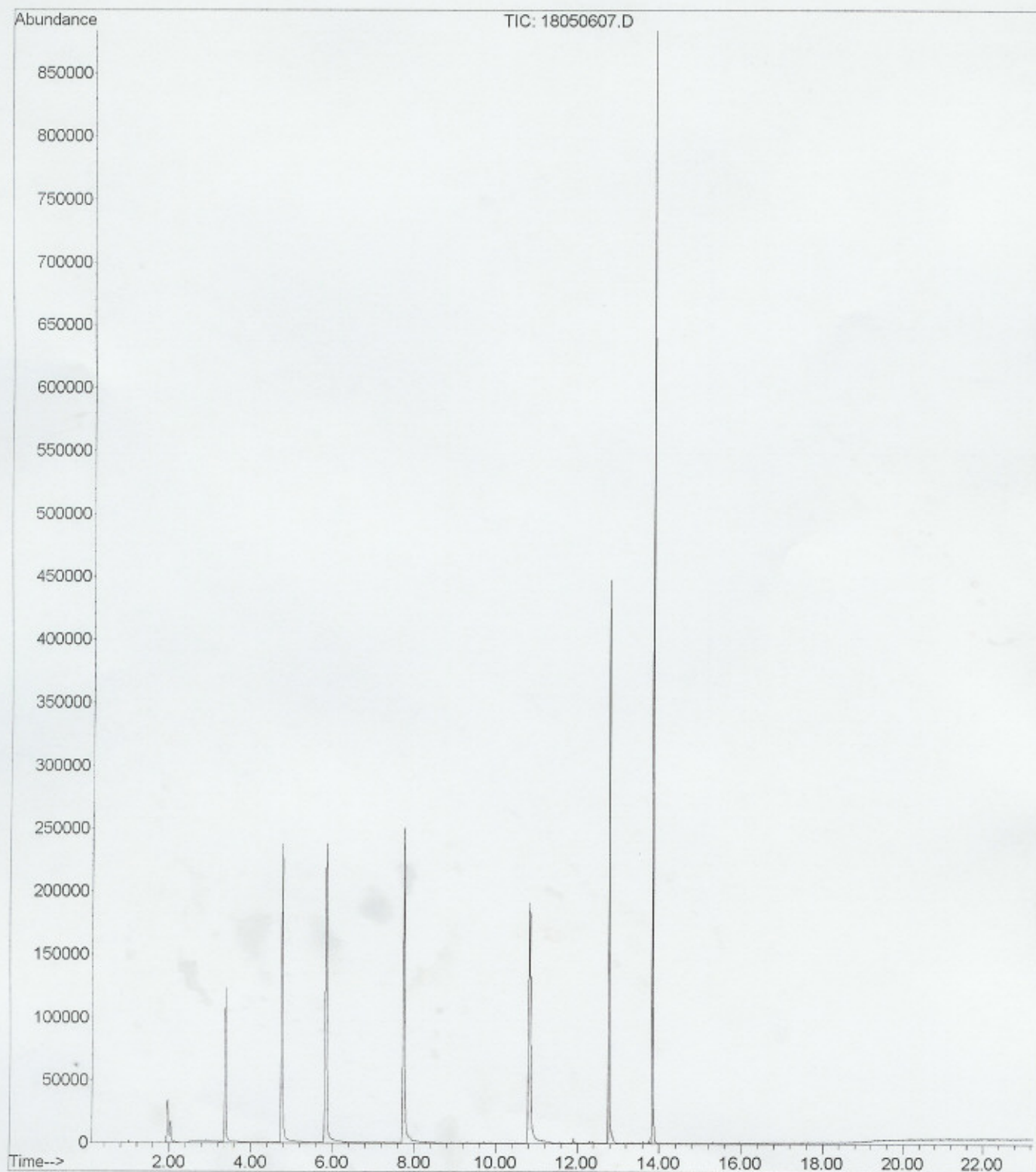
Project: 3705 Gravenstein Hwy. S., Sebastopol  
Project Number: 2871  
Project Manager: Mansour Sepehr

**Reported:**  
01-Jun-06 14:11

### Notes and Definitions

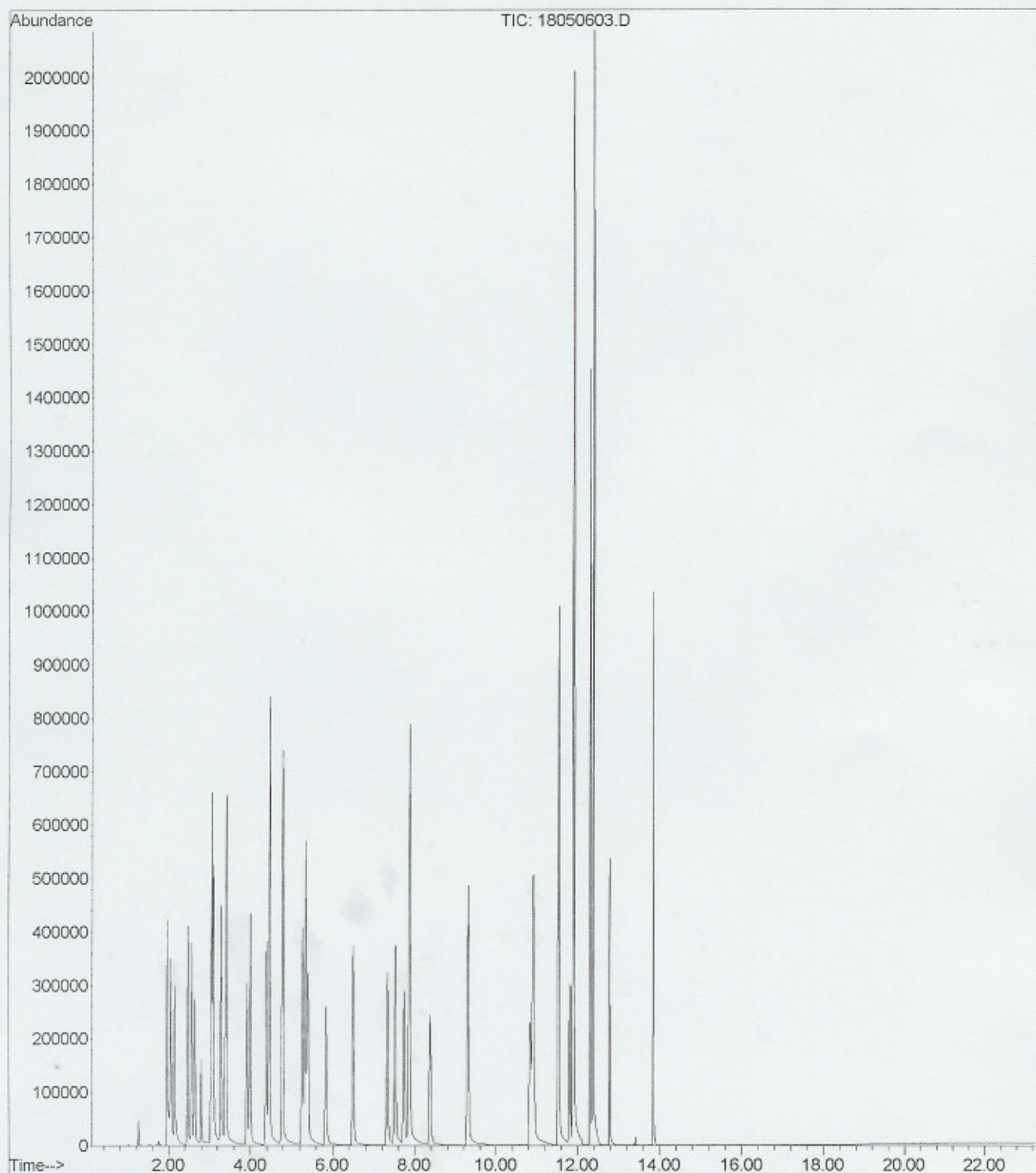
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

File : C:\MSDChem\1\DATA\2006-May-18-1147.b\18050607.D  
Operator :  
Acquired : 18 May 2006 4:42 pm using AcqMethod OXY21506.M  
Instrument : PAL GCMS  
Sample Name: BE62301-BLK1  
Misc Info :  
Vial Number: 7





File : C:\MSDCHEM\1\DATA\2006-May-18-1147.b\18050603.D  
Operator :  
Acquired : 18 May 2006 1:33 pm using AcqMethod OXY21506.M  
Instrument : PAL GCMS  
Sample Name: BE62301-BS1@voc  
Misc Info :  
Vial Number: 3



File : C:\MSDChem\1\DATA\2006-May-18-1147.b\18050604.D  
Operator :  
Acquired : 18 May 2006 2:19 pm using AcqMethod OXY21506.M  
Instrument : PAL GCMS  
Sample Name: BE62301-BS1@gas  
Misc Info :  
Vial Number: 4

